openings in housings 220, 222 and spacer element 224 to secure assembly 204 in an assembled condition as shown in Figure 7.

[0046] Figure 9 is an exploded view of fuse 202 wherein like features of fuse 12 (shown in Figures 1 and 2) are designated with like reference characters.

[0047] Fuse 202 includes two pairs of opposite front and back covers 250, 252, separated by a spacer element 253 and attached to one another according to known methods and techniques, including but not limited to rivets 256 and screws (not shown), adhesive processes and ultrasonic welding processes. Disposed between each pair of front and back covers 250, 252 is a fuse housing 32. A pair of fuse terminals 30 extend from each of two fuse housings 32, and a primary fuse link 34 is electrically coupled to each pair of fuse terminals 30. Fuse links 34 extend in parallel with one another across respective pairs of fuse terminals 30, one terminal forming a line-side electrical connection and the other terminal forming a load-side electrical connection.

[0048] As illustrated in Figure 9, each fuse link 34 is a substantially flat and generally linear conductive strip including an area of reduced cross section, or a weak spot therein. Upon an occurrence of a predetermined current fault condition, dependent upon dimensions and characteristics of fuse link 34, the weak spot reaches an operating temperature sufficient to melt, disintegrate, vaporize, decompose, or otherwise open fuse links 34 at or near the weak spot to break an electrical connection through fuse links 34. It is contemplated, however, that a variety of fuse elements may be employed in alternative embodiments in lieu of the illustrative fuse links 34 without departing from the scope of the present invention. For instance, non-linear (e.g., bent or curved) fuse elements, fuse elements including a plurality of weak spots, and wire fuse elements without weak spots, in addition to other fuse elements familiar to those in the art, may be likewise employed in the present invention. Additionally, in one embodiment, primary fuse links 34 are fabricated so that when connected in parallel fuse 202 has a combined rating of 130 to 250 amps and a safety interrupt of 100kA at 80Vdc. It is appreciated, however, that in alternative embodiments, fuse links 34 may be constructed to meet other performance objectives.

[0049] In an alternative embodiment, common line-side terminals 30 and common load-side terminals 30 are employed by electrically coupling respective terminals 30 of each housing 32. Thus, for example, a U-shaped line contact terminal may be employed with the legs of the U extending through a bottom of fuse housings

32 and a U-shaped load contact terminal may be employed with the legs of the U extending through a bottom of fuse housings 32. Primary fuse links 34 may then be extended between a leg of the line terminal and a leg of the load terminal within each of fuse housings 32.

[0050] Terminal posts 258 extend through a top surface of fuse housings 32 for establishing an electrical connection to open circuit indication device 36. Alarm terminal 42 is fitted within a compartment 260 of one of housings 258 and also is established in electrical communication with open circuit indication device 36.

[0051] Open fuse indication device 36 includes a printed circuit board 262 including apertures 264 for electrical connection to terminal posts 258 that are in turn, coupled to fuse terminals 30 for establishing line and load electrical connections to external circuitry (not shown). Printed circuit board 262 includes high resistance electronic circuitry, explained below, that operates LED 38 in response to a voltage drop across terminal posts 258 when primary fuse links 34 melt, disintegrates, vaporizes or otherwise opens and breaks an electrical connection between fuse terminals 30 via fuse links 34. As such, LED 38 is illuminated when fuse links 34 operate, thereby providing local fuse state indication. Circuitry on printed circuit board 264 also signals external equipment, such as a relay in a telecommunications system, through alarm terminal 42 and associated alarm terminals of a switch housing assembly such as assembly 204 (shown in Figure 8).

[0052] LED 38 protrudes through an opening in one of fuse housings 32 so that fuse state indication is readily ascertainable from visual inspection of LED 38. If LED 38 is not illuminated, fuse 202 is functional, i.e., fuse links 34 have not opened due to fault current conditions. On the other hand, if LED is illuminated, fuse 202 has operated and should be replaced with a functional fuse.

[0053] Fuse housings 32 each further includes an opening 268 extending through bottom of fuse housing 32 to facilitate introduction of an arc quenching media, such as silica sand, to surround terminals 30 and fuse link 34 within each housing 32. The arc quenching media prevents and/or suppresses arcing between fuse terminals 30 when fuse links 34 open. A plug 272 is inserted into each opening 268 after fuse housings 32 are filled with the arc quenching media to seal fuse 202. In an exemplary embodiment, plug 272 is ball fabricated from nylon or other suitable materials and applied to opening 268 according to known techniques.

[0054] Additionally, a polarization projection 274 extends from each side of spacer element 224 (shown in Figure 8) and projection 274 is received in complementary grooves 275 formed into each lateral side of fuse spacer element 253. Projection 274 prevents insertion of fuse 202 into fuse receptacle 210 except in a designated orientation when projections 274 are inserted into groove 275. Thus, correct polarization of the fuse terminals is ensured with respect to associated line and load connections with the applicable switch housing assembly.

[0055] Fuse 202 in combination with switch housing assembly 204 (shown in Figure 8) provides a fused disconnect assembly 200 (shown in Figure 7) that facilitates installation to existing equipment without auxiliary components or hand wired connections and is capable of higher current protection than assembly 10 (shown in Figure 1). Switching is achieved by inserting or extracting fuse 202 from switch housing fuse receptacle 210 (shown in Figure 7), and local and remote opened fuse indication provides ready indication of opened fuses for replacement. Because a variety of differently rated fuses are accommodated by switch housing receptacle 210, a versatile fused disconnect system is provided that is suitable for a wide variety of applications.

[0056] Figure 10 is perspective view of another embodiment of a fused disconnect assembly 300 including fuse 202 and a switch housing assembly 302 coupled to a common output bus 304.

[0057] It may be recognized that switch housing assembly 302 is essentially a double-wide version of switch housing assembly 100 (shown in Figure 5) to facilitate enhanced overcurrent protection in conjunction with fuse 202. Accordingly, switch housing assembly 302 includes a fuse receptacle 306, a pair of bullet contact assemblies 16 for line-side connection to external circuitry, and a pair of load-side terminal contact assemblies 102 (not shown in Figure 10) that are connected to output bus 304. When fuse 202 is inserted into fuse receptacle 306, and further when bullet contact assemblies 16 are coupled to line side connections, an electrical circuit is established through fuse 202 between each respective pair of bullet contact assemblies 16 and the terminal contact assemblies 102. The load may be disconnected by extraction of fuse 202 from switch housing assembly 306.

[0058] Figure 11 is an exploded view of a switch housing assembly 302 including substantially identical front and rear housings 310, 312 and a spacer element 314 located therebetween. Each housing 310, 312 includes fuse terminal